

WHAT IS CLAIMED IS:

1. A method of locating a blood vessel disposed within surrounding tissue, comprising:

5 transmitting acoustic energy into said tissue including said blood vessel;
evaluating reflections of said acoustic energy as a function of
propagation of said energy within said blood vessel, and
identifying at least one region of reduced energy reflection within said
tissue, said at least one region corresponding to said blood vessel.

10 2. The method of Claim 1, wherein said act of evaluating comprises
analyzing at least one A-mode line.

3. The method of Claim 2, further comprising correlating said at least one
region to a depth location within said tissue based on said act of analyzing said at least
one A-mode line.

15 4. The method of Claim 1, wherein said act of identifying comprises:
forming at least one integrated power representation based on said
reflections; and
identifying at least one artifact within said at least one integrated power
representation, said at least one artifact corresponding to the lumen of said blood
vessel.

20 5. The method of Claim 4, wherein the act of identifying at least one
artifact comprises identifying at least one plateau within a normalized integrated power
profile.

25 6. The method of Claim 1, wherein said act of identifying comprises:
measuring the signal level of said reflections as a function of depth
within said tissue; and
identifying the lumen of said blood vessel based on at least one feature
identified during said act of measuring.

30 7. A method of detecting at least one wall of a blood vessel, comprising:
transmitting acoustic energy into the blood vessel;
detecting at least one region associated with the lumen in said blood
vessel; and

detecting the location of said at least one wall of the blood vessel relative to said lumen;

wherein the act of detecting the location comprises analyzing A-mode data derived from said act of transmitting.

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8. A method of locating a blood vessel in tissue, comprising:

generating at least one beam of acoustic waves;

transmitting said at least one beam of acoustic waves into said tissue, said beam moving with respect to said tissue so as to ensonify different portions of said tissue as a function of time;

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receiving energy backscattered by said tissue and said blood vessel;

analyzing said backscattered energy to identify at least one artifact therein, said at least one artifact resulting from the lumen of said blood vessel; and

correlating said at least one artifact to the location of said blood vessel.

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9. A device, comprising:

at least one transducer capable of transmitting an acoustic wave into a blood vessel and receiving a plurality of echoes therefrom, said first transducer configured to generate first signals related to said echoes;

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a processor, operatively connected to said first transducer, and configured to process said first signals to determine the location of the lumen of said blood vessel;

a positioning device adapted to receive at least a portion of said at least one transducer, and alter the position thereof with respect to said blood vessel; and

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a controller, operatively connected to said positioning device, which controls said positioning device based at least in part on said location of said lumen relative to said at least one transducer.